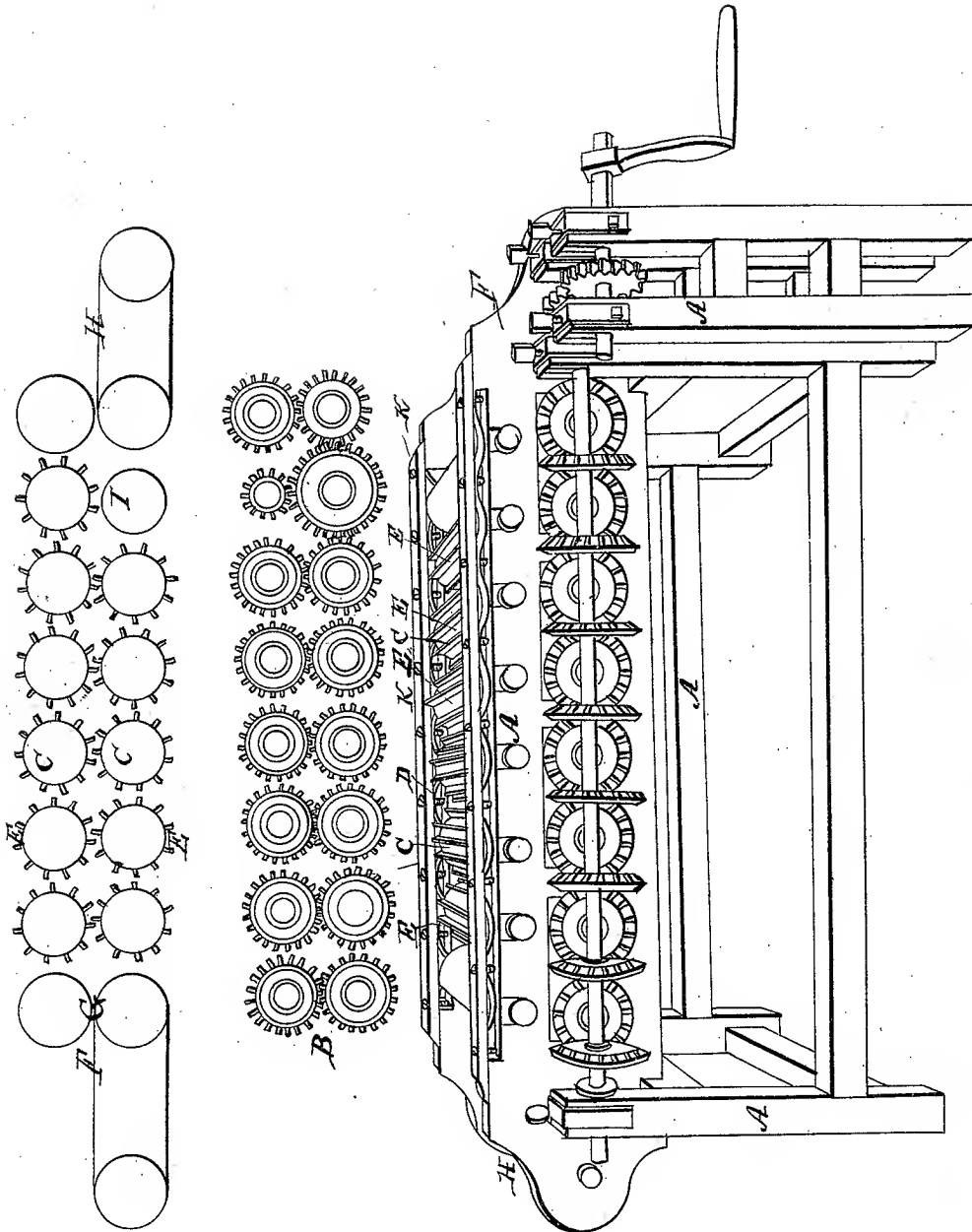


W. & R. BRITAIN.

Hemp Brake.

No. 423.

Patented Oct. 12, 1837.



UNITED STATES PATENT OFFICE.

WILLIAM BRITTAIN AND ROBERT BRITTAIN, OF HUNTERDON COUNTY,
NEW JERSEY.

IMPROVEMENT IN HEMP AND FLAX DRESSING-MACHINES.

Specification forming part of Letters Patent No. 423, dated October 12, 1837:

To all whom it may concern:

Be it known that we, WILLIAM BRITTAIN and ROBERT BRITTAIN, of the county of Hunterdon, State of New Jersey, have invented a new and useful Improvement in the Machine for Breaking and Dressing Flax and Hemp, of which the following is a full and exact description as invented and improved by us, reference being had to the annexed drawings of the same, making part of this specification.

The machine for breaking and dressing flax and hemp, as improved by our invention, is as follows, viz: It consists of a frame, A, supporting the gearing B necessary to communicate motion from the propelling-power to two or more pairs of cylinder-rollers, C, which are fixed upon the said frame in two horizontal rows, each roller in the upper row having a spring, D, above its pivot or gudgeon, so constructed that it may be relaxed or contracted at pleasure by means of a spring-bar and regulating-screws, hereinafter described; also, a corresponding roller in the lower row immediately under it. These rollers are geared together in pairs, one of each pair receiving its motion from a shaft connected with the moving power in any of the various modes of gearing-machinery. Thin plates of metal E are firmly fastened edgewise in each roller, longitudinally and parallel to each other, at a convenient distance apart. The edges of these plates project beyond the surface of the roller in which they are fixed, and the flax or hemp, with or without rotting, is conducted in front by a feeding-cloth, F, until it is received between the first pair of rollers, G, and thence by the motion of the machine it passes entirely between the two rows of rollers, and is received upon another cloth, H, which carries it forward broken and dressed. Most of the rollers are so geared as, when revolving, to bring the metallic plates in the upper roller alternately between those in the lower rollers, by which the flax or hemp stalks are successively and repeatedly broken as they pass them. The plates in the rollers in the front part of the frame may be fixed farther apart than those on the after part of the frame; also, the roller on one part of the frame may have

a different motion from the others; but it is necessary that one or more of the upper rollers in the latter part of the working should receive a quicker motion than the others. In this case the lower roller, I, has no plates fixed in it, and revolves slower than its corresponding roller above. The object of this arrangement is to loosen and discharge more effectually the shives from the flax or hemp stalks. The number, size, and motion of the rollers, and number and size of the plates in each, may be varied almost without limits.

K represents a spring-bar, made of wood or steel, secured on the top of the frame by bolts or screws passing through near its ends. Through this bar and through slots in the ends of the steel springs, under it and over the boxes of the roller-gudgeons, pass a number of vertical screws entering the side of the frame for increasing or diminishing the power of the steel springs by depressing the spring-bar upon or raising it above them. When it is found necessary to increase the pressure of any one of the top rollers upon its corresponding roller below, the vertical screws passing through the spring-bar and through the slots in the ends of the spring upon the movable box of its gudgeons, must be turned to the right so as to bring down the spring-bar at that point, thus contracting said spring; and when the pressure is to be decreased the screw must be turned to the left. There is a corresponding spring-bar, K, and screws on the opposite side of the frame, made to act in a similar manner upon the springs of the gudgeons in the other ends of the rollers.

The uses and advantages of this machine are in the expedition and economy with which flax and hemp may be broken and dressed.

The machine may be attached to horse or any other power, and the flax or hemp entirely cleaned with little skill on the part of the operator. By this process flax or hemp is liable to less waste than perhaps in any other, and by repeating the operation of the same material between the rollers the filaments are softened suitably for any fabric to which these articles are adapted.

We do not claim the general arrangement

of the rollers, nor the insertion of metallic plates along them, these having been before used; but

What we do claim as our invention in the above-described machine is—

1. The employment of one or more smooth rollers, the antagonists of which are furnished with metallic plates, and are so geared as to run with a different rate of speed, so that the material between them may be operated upon by a rubbing motion, as herein set forth.

2. The use and application of the spring-bars K K, for the uses and purposes herein set forth, and in the manner before described.

WILLIAM BRITAIN.
ROBERT BRITAIN.

Witnesses:

ELIJAH WILSON,
JOHN T. ROWLAND.